Advant® OCS
with Master software

Advant® Station 100 Series Engineering Station

User’s Guide

3BSE 007 117R701

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WARNING	Hazards which could result in personal injury
CAUTION	Hazards which could result in equipment or property damage
NOTE	Alerts user to pertinent facts and conditions.

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Chapter 1 Introduction

1.1 Before You Begin

This user's guide is the primary documentation for Advant Station 100 Series Engineering Stations and is valid for:

- Advant Station 120 Engineering Station (PCI)
- Advant Station 130 Engineering Station (ISA)
- Advant Station 100 Series Engineering Board – PCI
- Advant Station 100 Series Engineering Board – ISA.

It describes the Advant Station 100 Series Engineering Stations, the Advant Station 100 Series Engineering Boards and gives a product overview of Advant Engineering Products. The Application Builder, the On-line Builder, and the Function Chart Builder functions are described in separate manuals (see Section 1.5, Related Documentation).

1.2 Equipment Requirements

Not applicable.

1.3 How to Use This Book

This book is organized into chapters and sections as shown in Figure 1-1.

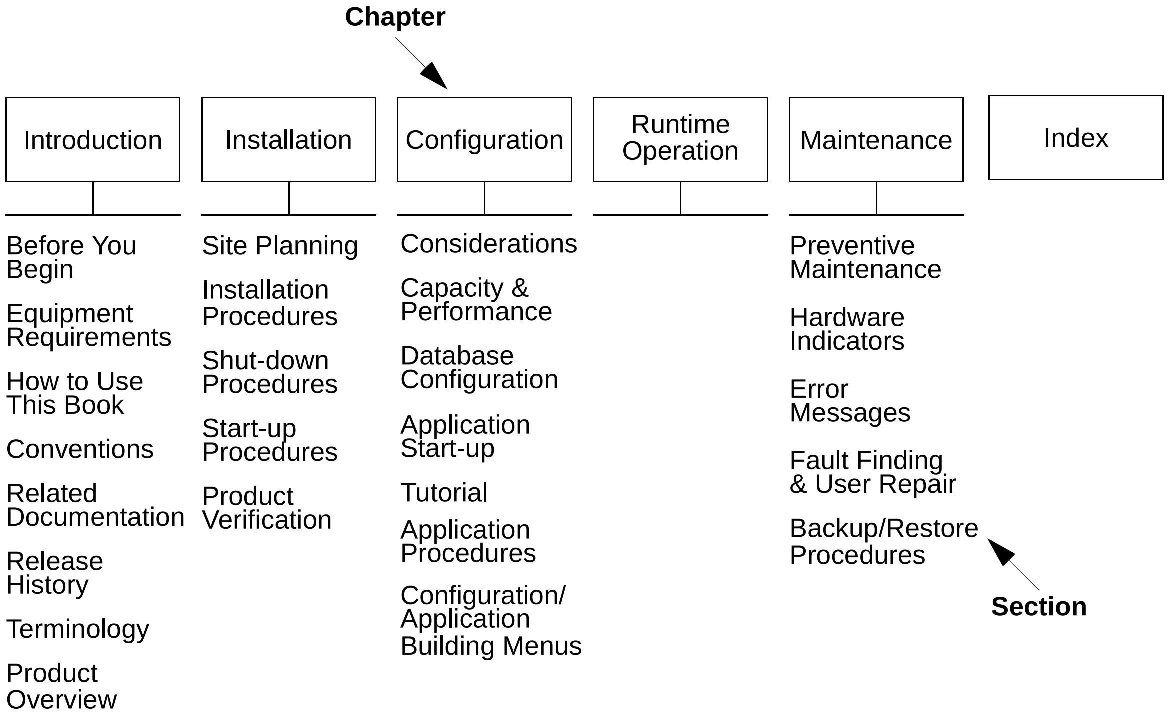

Figure 1-1. Organization of Manual

General information about the engineering stations and a product overview is included in Section 1.8, Product Overview. In Section 3.2, Capacity and Performance, the Advant Station 100 Engineering Station's hardware and the Advant Station 100 Series Engineering Board are described.

All details concerning setup and installation procedures you will find in Chapter 2, Installation.

In Chapter 5, Maintenance you get some hints on maintenance aspects.

1.4 Conventions

The following conventions are used throughout this manual for the presentation of material:

The names of referenced manuals are in italics.

Keyboard Interaction

When you read	You shall
<Ctrl+M>	Press the Ctrl key and the key labeled M simultaneously.

Syntax

To start a program or a command, enter the command syntax and press the **Enter** key. Specify the directory if needed.

- Bold strings are the command names and directories; they must be typed as they appear.
- Italic strings represent substitutable arguments and directories.

1.5 Related Documentation

Table 1-1 lists all documentation related to Advant Station 100 Series Engineering Stations.

Table 1-1. Related Documentation

Category	Title	Description
Software	Application Builder User's Guide	Describes Application Builder and start-up of the AMPL Control Configuration components Function Chart Builder, Bus Configuration Builder, and On-line Builder.
	Function Chart Builder User's Guide	This guide describes how the Function Chart Builder can be used to configure different target systems.
	On-line Builder User's Guide	This guide describes the Windows functions of On-line Builder. Beside the detailed description of all runtime operation menus and dialogs you find also important information about special print functions, start-up procedures and command line editing functions.
	On-line Builder Reference Manual	Describes all commands used in AS 100ES, AS 500ES and AS 500OS. Command sets and working methods are described as well as command file handling aspects.
Other	Advant Station 100 Series Engineering Board Installation Guide	This guide is delivered together with the Advant Station 100 Series Engineering Board. Contains descriptions of necessary installation operations.
	Advant Station 100 Series Engineering Board Functional Test Guide	This guide is delivered together with the Advant Station 100 Series Engineering Board – ISA. Contains descriptions of the test software in order to test basic functions of the ISA based engineering board DSPU131.
	IN Lite User Manual	Description of the host personal computer for Advant Station 130 Engineering Station (ISA).
	IP Lite User Manual	Description of the host personal computer for Advant Station 120 Engineering Station (PCI).

1.6 Release History

Table 1-2 lists the versions of the *Advant Station 100 Series Engineering Station User's Guide*.

Table 1-2. Release History

Version	Description
3BSE 007 117R0001	Describes Advant Station 100 Series Engineering Stations and is the initial history version.
3BSE 007 117R0101	Describes Advant Station 100 Series Engineering Stations with additions of Advant Station 130 Engineering Station
3BSE 007 117R0201	Minor changes
3BSE 007 117R0301	Upgrade of Advant Station 120/130 Engineering Station to Pentium CPU.
3BSE 007 117R0401	Phasing out of Advant Station 125 Engineering Station and Advant Station 120/125 Hardware Units
3BSE 007 117R0501	Phasing out of Advant Station 120 Engineering Station. Introducing Windows NT version of Advant Station 130 Engineering Station.
3BSE 007 117R0601	Describes Advant Station 130 Engineering Station. Phasing out of Windows 3.11.
3BSE 007 117R701	New Advant Station 120 Engineering Station with PCI based engineering board.

1.7 Terminology

The following is a list of terms associated with Advant Station 100 Series Engineering Stations that you should be familiar with.

Term	Description
Engineering station	Is used as a short term for Advant Station 100 Series Engineering Station.
Engineering board	The term is used for Advant Station 100 Series Engineering Board (AS 100EB)
Advant Controller 400 Series	The term is used for Advant Controller 410 and Advant Controller 450
Advant Controller 100 Series	The term is used for Advant Controller *X* where *X* may have a value from 1 to 199

Term	Description
Advant Station 500 Series Operator Stations	The term is used for Advant Station 510 Operator Station, Advant Station 515 Operator Station and Advant Station 520 Operator Station
Host personal computer	The term "host personal computer" is used for all Advant Station 100 Series Engineering Station's hardware, which is a portable, robust and hardened industrial personal computer, fulfilling all relevant Advant OCS environmental immunity specifications and safety standards.
AF 100	The abbreviation "AF 100" is used for Advant Fieldbus 100.
AF 100OPC	The abbreviation "AF100 OPC" is used for AF 100 OLE Process Control, an interface between AF 100 bus and HMI system.
ISA	The abbreviation "ISA" is used for "Industry Standard Architecture" bus, the predecessor of the PCI bus. The ISA bus is part of the architecture of your host personal computer.
PCI	The abbreviation "PCI" is used for "Peripheral Component Interconnect". The Advant Station 100 Series Engineering Board – PCI communicates via this bus, which is part of the architecture of your host personal computer. This bus provides greater system performance than the ISA bus.
DSPU131	The type designation of the ISA based engineering board.
PU516	The type designation of the PCI based engineering board.

1.8 Product Overview

1.8.1 Products

All products fulfill all relevant Advant OCS environmental immunity specifications and safety standards. For more information, see the *Advant OCS with Master Software Overview Product Guide*.

Advant Station 100 Series Engineering Stations are ready to use and include everything necessary for configuration and programming of Advant OCS systems. They contain the tools and the necessary hardware for configuration, application building, fault tracing, documentation, testing and commissioning of the following target systems:

- Advant Controller 100 Series
- Advant Controller 400 Series
- Advant Station 500 Series Operator Stations

- MasterPiece 51
- MasterPiece 200/1
- MasterView 800/1
- MasterGate 230/1
- AdvaSoft.

Advant Station 100 Series Engineering Stations are based on an IBM PC-compatible personal computer, suitable for use in industrial environment and satisfy the Advant OCS environmental immunity specifications and safety standards.

Two types of Advant Station 100 Series Engineering Stations are available:

- Advant Station 120 Engineering Station (PCI), with Pentium II 266 MHz CPU, a 4 GByte hard disk
- Advant Station 130 Engineering Station (ISA), with Pentium 166 MHz CPU, a 2 GByte hard disk.

Both types of engineering stations are available with Windows NT 4.0 operating system, they are equipped with an active 12.1" TFT color display, and 64 MByte RAM. Documentation for Windows NT, the host personal computer, drivers and utilities, is also included.

Advant Station 100 Series Engineering Board is needed for command execution and serves as an interface between Advant Station 100 Series Engineering Stations and target systems of type Advant Controller 400 Series.

AMPL Control Configuration including all options is installed on Advant Station 100 Series Engineering Stations.

Advant Station 120 and Advant Station 130 Series Engineering Station offer the following main functions:

- Application data administration with Application Builder
- System and application configuration of Advant Controller 400 Series, MasterPiece 200/1, MasterPiece 51, MasterGate 230/1, Advant Station 500 Series Operator Station and MasterView 800/1 by On-line Builder
- Application configuration of Advant Controller 400 Series and MasterPiece 200/1 process stations off-line using Function Chart Builder
- Application configuration and commissioning, including fault tracing of Advant Controller 100 Series on-line and off-line by Function Chart Builder
- Configuration support for AF 100OPC by Bus Configuration Builder.

For more detailed information on AMPL Control Configuration see the *Application Builder User's Guide*.

1.8.1.1 Advant Station 120 Engineering Station (PCI)

Advant Station 120 Engineering Station (PCI) is ready to use and includes all necessary software and hardware for all target systems, listed in Section 1.8.1, Products. It consists of a host personal computer with Windows NT 4.0 operating system, the Advant Station 100 Series Engineering Board – PCI, and AMPL Control Configuration including options (see Section 1.8.1.3, Advant Station 100 Series Engineering Board – PCI and Section 3.2.1, Advant Station 100 Series Engineering Stations' Hardware).

NOTE

It's not possible to use the engineering board DSPU131 in a PC of type Advant Station 120 Engineering Station (PCI).

1.8.1.2 Advant Station 130 Engineering Station (ISA)

Advant Station 130 Engineering Station (ISA) is ready to use and includes all necessary software and hardware for all target systems, listed in Section 1.8.1, Products. It consists of a host personal computer with Windows NT 4.0 operating system, the Advant Station 100 Series Engineering Board – ISA, and AMPL Control Configuration including options (see Section 1.8.1.4, Advant Station 100 Series Engineering Board – ISA and Section 3.2.1, Advant Station 100 Series Engineering Stations' Hardware).

1.8.1.3 Advant Station 100 Series Engineering Board – PCI

Advant Station 100 Series Engineering Board – PCI is necessary to connect an appropriate host personal computer equipped with this board to an Advant Controller 400 Series.

The product contains the following components:

- The engineering board PU516, used for Advant Controller 400 Series, MP 200/1 and MV 800/1 connection
- Cables for connection to target stations and special connector
- An installation guide.

Cables for connection to MasterBus 300 are not included.

Advant Station 100 Series Engineering Board can be plugged into a free long PCI slot of a host personal computer.

See Section 3.2.2, The Engineering Board PU516 for detailed information about the engineering board and Section 2.2.5.1, Engineering Board Installation on requirements for own personal computers.

1.8.1.4 Advant Station 100 Series Engineering Board – ISA

Advant Station 100 Series Engineering Board – ISA is necessary to connect a appropriate host personal computer equipped with this board to an Advant Controller 400 Series.

The product contains the following components:

- The engineering board DSPU131, used for Advant Controller 400 Series, MP 200/1 and MV 800/1 connection

- Cables for connection to target stations and special connector
- An installation guide and a functional test guide.

Advant Station 100 Series Engineering Board can be plugged into a free AT-size slot of a host personal computer. A free slot, AT size long and XT size high is required.

See Section 3.2.3, The Engineering Board DSPU131 for detailed information about the engineering board and Section 2.2.5.1, Engineering Board Installation on requirements for own personal computers.

NOTE

It's not possible to use the engineering board DSPU131 in a PC of type Advant Station 120 Engineering Station (PCI).

1.8.1.5 AMPL Control Configuration

AMPL Control Configuration includes all software necessary to configure Advant OCS. It is delivered on CD-ROMs and includes:

- Application Builder
- Function Chart Builder
- Bus Configuration Builder.

As options are available:

- On-line Builder
- AMPL PC and DB Element Libraries
  including libraries for:
  - Advant Controller 100 Series
  - Advant Controller 400 Series
  - MasterPiece 200/1
  - AdvaSoft.

NOTE

To work with Function Chart Builder, at least one AMPL PC or DB Element Library must be installed. Further AMPL PC and DB Element Libraries are available from various Business Units and other ABB companies for application specific extensions of controllers.

1.8.1.6 Printer

Printer

Alphanumeric/graphic printers (wide carriage) are available for printing.
See the *Advant OCS Product Guide* for more information.

Chapter 2 Installation

2.1 Site Planning

The power supply of the host personal computer recognizes the actual mains voltage and switches automatically. Use the Advant Station 100 Series Engineering Stations within mains voltage ranges:

- 115V +10%, -15%; 50 - 60 Hz +6%, -6% or
- 230V +10%, -15%; 50 - 60 Hz +6%, -6%.

CAUTION

If you are using the Advant Station 100 Series Engineering Station on-line, that is, in connection with an Advant Controller, use the mains socket in the cabinet of the target system only!

2.2 Installation Procedures

2.2.1 How to Connect Advant Station 100 Series Engineering Stations

Various connectors are available to connect the Advant Station 100 Series Engineering Stations to the target systems and to peripheral equipment. The connectors, switches, indicators and a diskette drive are accessible from the front, back and right sides of the case.
Advant Station 130 Engineering Station (ISA) has additional connectors on the left side.
The right side of Advant Station 130 Engineering Station (ISA) is shown in Figure 2-1.
The right side of Advant Station 120 Engineering Station (PCI) is shown in Figure 2-2.

CAUTION

For proper operation of the engineering stations, it is important that you only connect peripheral equipment that fulfills all relevant Advant OCS environmental immunity specifications and safety standards. This is the only way the high quality of the equipment as a whole can be guaranteed. Ignoring these demands may be dangerous!

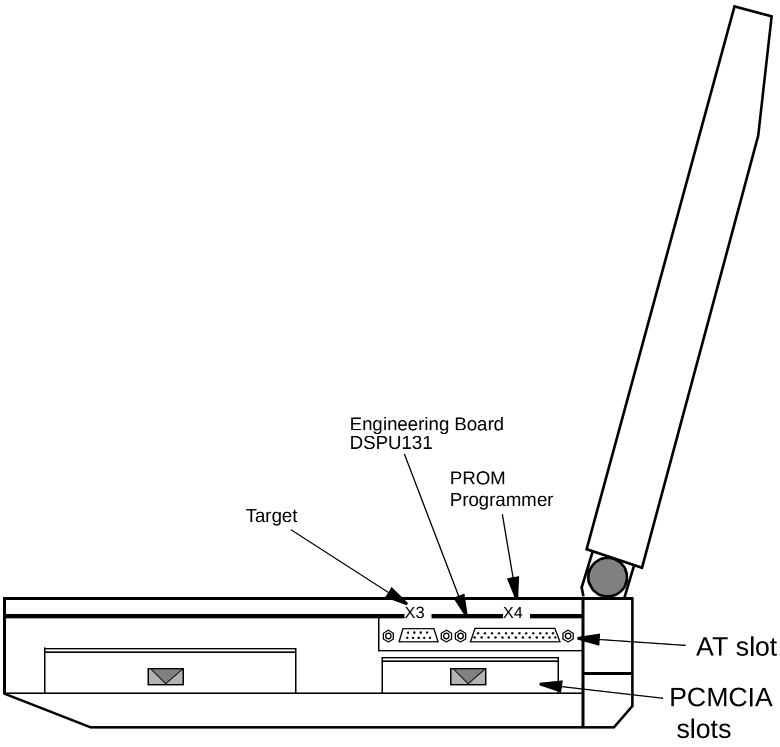

Figure 2-1. Right Side of Advant Station 130 Engineering Station (ISA) Case

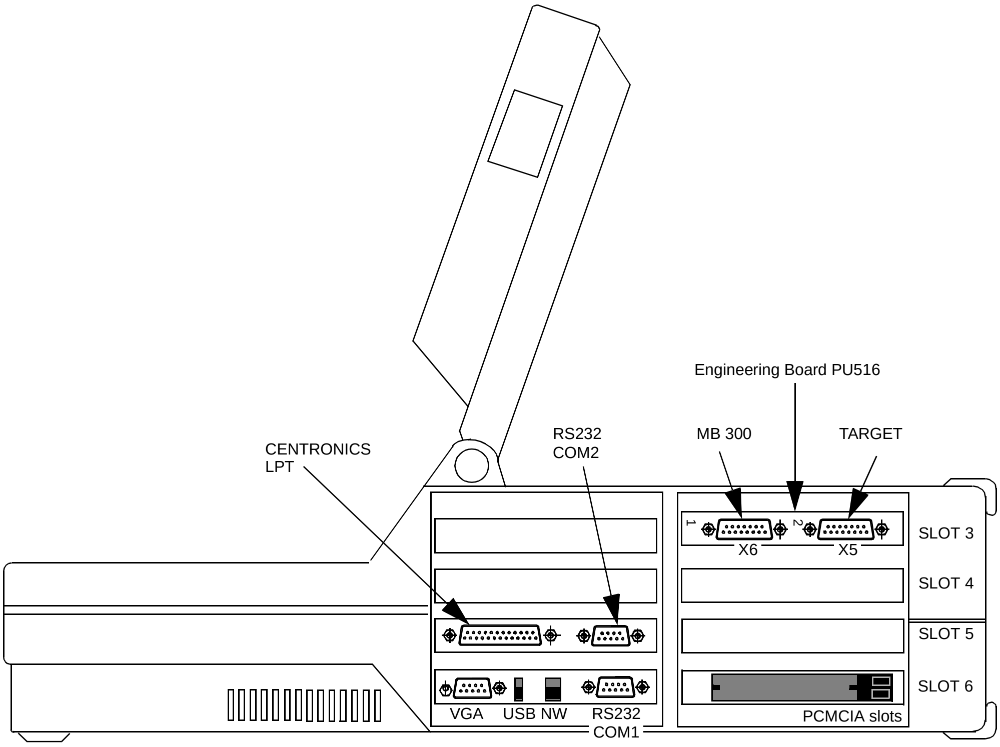

Figure 2-2. Right Side of Advant Station 120 Engineering Station (PCI) Case

Connect the Advant Station 100 Series Engineering Stations to target systems and equipment according to the following instructions:

1. Switch the power *off* for target systems, equipment and the engineering station (see Section 2.3, Shut-down Procedures). Check for voltage correspondence between mains voltage and target systems and equipment.
2. Connect the target systems and equipment according to the instructions below.
3. Connect the power cords of the target systems and equipment and the engineering station with the mains socket. Use adjacent outlets to provide the same ground potential and, by doing so, avoid interference (see Section 2.1, Site Planning).
4. Turn on the power of the target systems and equipment and the engineering station (see Section 2.4, Start-up Procedures).

Advant Controller 100 Series Target Systems

Connect to Advant Controller 100 Series via a standard RS232 link, operating at 9600 Baud. The assigned connector for the serial line, COM1, is shown in Figure 2-2 for the Advant Station 120 Engineering Station (PCI). The COM1 connector of Advant Station 130 Engineering Station (ISA) is on the left side of its case under a flap.

Trackball

Connect to the trackball via an RS232 link. The assigned connector for the trackball is the Mouse connector on the front panel of the Advant Station 120 Engineering Station (PCI) and on the left side of the Advant Station 130 Series Engineering Station. Beside the possibility of connecting an external trackball, Advant Station 100 Series Engineering Stations has a keyboard with an integrated trackball.

Printer

AMPL Control Configuration uses the standard Windows NT printer functions. Use the Windows NT Printer Setup dialog to assign printer and port. See Section 2.2.2, Printer Setup for more information.

Advant Controller 400 Series Target Systems

Connect to Advant Controller 400 Series, MasterPiece 200/1, MasterView 800, MasterGate 230/1 and MasterPiece 51 via the serial line

- X3 (target) connector of the Advant Station 100 Series Engineering Board – ISA, shown in Figure 2-1 on page 2
- X5 (target) connector of the Advant Station 100 Series Engineering Board – PCI, shown in Figure 2-2 on page 3.

For specification of the interface, see Section 2.2.5.2, Engineering Board's Interfaces and Connectors.

Master Bus 300

Connect to Advant Controller 400 Series, MasterPiece 200/1, MasterView 800, and MasterGate 230/1 through Master Bus 300, via the X6 connector of the Advant Station 100 Series Engineering Board – PCI, shown in Figure 2-2 on page 3.
For specification of the interface, see Section 2.2.5.2, Engineering Board's Interfaces and Connectors.

PROM Programmer (Advant Station 130 Engineering Station (ISA) only)

Connect to the PROM programmer via the X4 connector of Advant Station 100 Engineering Board – ISA, shown in Figure 2-1 on page 2. For specification of the interface, see Section 2.2.5.2, Engineering Board's Interfaces and Connectors.

2.2.2 Printer Setup

AMPL Control Configuration uses the standard Windows NT printer functions. This includes also the printing functions of On-line Builder.

Check if the printer driver needed for your printer is installed on your engineering station. Use then the Windows NT printer setup dialog to assign printer and port.

Mannesmann Tally 151/9 Printer:

There is no printer driver for Windows NT available. If you want to use this printer on Windows NT, use it in Epson emulation and setup the appropriate driver (Epson FX 850).

2.2.3 Software Settings

2.2.3.1 Advant Station 120 Engineering Station (PCI)

The following settings apply to Advant Station 120 Engineering Station (PCI), with Windows NT 4.0:

Engineering Board PU516

The device driver for the engineering board is installed together with On-line Builder. You can watch the setting in the **Devices** dialog in the **Control Panel**. The following setting applies:

Device	**Status**	**Startup**
PU510	Started	Automatic

2.2.3.2 Advant Station 130 Engineering Station (ISA)

The following settings apply to Advant Station 130 Engineering Station (ISA), with Windows NT 4.0:

Engineering Board DSPU131

The device driver for the engineering board is installed together with On-line Builder. You can watch the setting in the **Devices** dialog in the **Control Panel**. The following setting applies:

Device	**Status**	**Startup**
VDSPU100	Started	Automatic

2.2.3.3 Common Settings

Flash Card Programming

The drivers and services needed for flash card programming are installed on Advant Station 100 Series Engineering Stations. The On-line Builder's flash card programming function uses Award's CardWare for Windows NT software. You can watch the settings in the **Devices** dialog in the **Control Panel**. The following device driver settings apply:

Device	**Status**	**Startup**
PCATA	Started	Automatic
PCCS	Started	Boot

Device	**Status**	**Startup**
PCDISK	Started	Automatic
PCENABLE	Started	Boot
PCFLASH	Started	Automatic
Pcmcia		Disabled
PCSRAM	Started	Automatic
SSPCIC	Started	Boot

In addition to the device drivers, flash card programming requires the following service which you can check in the **Services** dialog in the **Control Panel**:

Service	**Status**	**Startup**
Cardware Service	Started	Automatic

CardWare runs one additional program for the card supervision. This program is called **PCTray**. It must be started via the **Startup** folder so that it is automatically running when Windows NT is started.

NOTE

To be able to use all features of flash card programming on Windows NT, it is necessary that you are logged on as Administrator or as a user of the administrator's group. See also Section 2.4, Start-up Procedures.

2.2.4 BIOS Settings

The following settings apply to Advant Station 100 Series Engineering Station, with Windows NT 4.0:

BIOS Setup

In the BIOS Setup the PCMCIA interface for Advant Station 100 Series Engineering Station is configured as follows:

Motherboard Devices Menu

```
PCMCIA Interface: Enabled: 3E0-3E1
```

Chipset Configuration Menu

```
IRQ Assignment: IRQ 10 ISA Device
```

2.2.5 Engineering Board

The Advant Station 100 Series Engineering Board is necessary for communication with target systems of type Advant Controller 400 Series with On-line Builder, and for using the routing function of Function Chart Builder which can be used to communicate with target systems of type Advant Controller 110 via Advant Controller 400 Series.

2.2.5.1 Engineering Board Installation

For installation, see the *Advant Station 100 Series Engineering Board Installation Guide.* For functional check procedures for the Advant Station 100 Series Engineering Board – ISA, see the *Advant Station 100 Series Engineering Board Functional Test Guide.*

CAUTION

If an own suitable personal computer is intended to be connected on-line to a target system or an industrial process, it has to fulfill, together with the built-in Advant Station 100 Series Engineering Board and its peripherals, all requirements listed below under "Alternative 1".

Depending on the environment in which it shall be used, an own suitable personal computer has to fulfill the following requirements:

Alternative 1: On- and off-line use in industrial environment

The personal computer has to fulfill the requirements stated in the section "Environmental Immunity" of the *Advant OCS with Master Software Overview Product Guide* and the following standards:

- EN 50081-1 EMC, Emission
- EN 50082-2 EMC, Immunity
- EN 60950 Electrical safety.

Alternative 2: Only off-line use in residential, commercial and light industrial environment; on-line use is not permitted

The personal computer has to fulfill the following standards:

- EN 50081-1 EMC, Emission
- EN 50082-1 EMC, Immunity
- EN 60950 Electrical safety.

For both alternatives, further requirements concerning personal computers that carry an Advant Station 100 Series Engineering Board are the following:

- IBM PC compatible, with at least 90 MHz Pentium CPU
- At least 32 MByte RAM, 64 MByte RAM recommended
- CD-ROM drive for installation of software
- At least 2 GByte hard disk
- At least a VGA graphics adapter; 1024 x 768 resolution recommended
- One port for mouse or trackball connection
- One serial communication port for Advant Controller 100 Series connection
- One parallel or serial port for the printer, unless printing via network

- Operating system Windows NT 4.0.
  For requirements concerning Windows NT and its Service Packs, see the *On-line Builder Release Notes*.

Further requirements in case of engineering board PU516 (PCI):

- One free PCI expansion slot, full length
- Power requirements for the engineering board PU516:
  - +5V 13W, +12V 1.5W without connection to MB300 transceiver
  - +5V 13W, +12V 7.5W when connected to MB300 transceiver.

Further requirements in case of engineering board DSPU131 (ISA):

- One free ISA expansion slot, AT size long and XT high
- Power requirements for the engineering board DSPU131:
  - +5 V 1.6 A, +12 V 25 mA, -12 V 25 mA.
- Free ISA memory from C800H:0H to CBFFH:FH for the engineering board DSPU131:
  - Make sure that the BIOS of this personal computer allows ISA boards to use the memory area C8000-CBFFF.
  - The memory area at C8000-CBFFF must not be occupied by any other hardware.
  - The memory area at C8000-CBFFF must not be cashed, shadowed, swapped, or moved by the BIOS.
- 4 bytes free I/O space at address 320H for the engineering board DSPU131.

Remark: Engineering board DSPU130 (the predecessor of DSPU131) required one free AT size long and AT high ISA expansion slot.

PCI Settings in BIOS Setup (Advant Station 130 Engineering Station (ISA) only)

If you use a host computer with PCI bus you need the following settings for the Advant Station 100 Series Engineering Board – **ISA** (DSPU131):

• ISA Memory Block Base (address):	C800
• Size:	16 KByte.

NOTE

While all reasonable efforts have been made to make certain that the engineering board works on all computers meeting these specifications, responsibility for compatibility in each individual case cannot be assumed. The only way to make sure that the engineering board is running in your personal computer, is to test the personal computer together with the board.

2.2.5.2 Engineering Board's Interfaces and Connectors

The engineering board's communication interfaces are available via the connectors.

Advant Station 100 Series Engineering Board – PCI

Connector X5

X5 is a 15-pin D-connector for communication with a target system of type Advant Controller 400 Series. It contains an RS232 interface and an RS485 interface.

The transmission speed is 153.6 kbit/s via the RS485 interface, which is the standard communication link to a target system. The RS232 interface normally operates at 9.6 kbit/s and is used if the RS485 interface is not available.

The RS232 interface can also be operated at 1200 baud for communication via the public telephone network, using modems. This does not impose any restrictions on functionality, although the response time is prolonged. This transmission speed is not intended for normal work with a target system. For best results, the public telephone network link must be of sufficient quality.

One of the following cables is required:

- TK624V030 Cable assembly, L=3m or
- TK624V115 Cable assembly, L=15m.

The cable has the following Dsub connectors: 15-pos pin to 9 pos pin and is used for connection to AC400, MP200/1 or MV850/1.

Connector X6

X6 is a 15-pin D-connector for connection to MasterBus 300 or MasterBus 300E. It contains an IEEE802.3 interface.

One of the following cables is required:

- TK526V050 Cable Assembly Connection Cable 5 m or
- TK526V115 Cable Assembly Connection Cable 15 m.

The cable has the following Dsub connectors: 15-pos socket to 15-pos pin and is used for connection to transceiver for ThickNet communication.

Advant Station 100 Series Engineering Board – ISA

Connector X3

X3 is a nine-pin D-connector for communication with a target system of type Advant Controller 400 Series. It contains an RS232C interface and an RS422 interface.

The transmission speed is 153.6 kbit/s via the RS422 interface, which is the standard communication link to a target system. The RS232C interface normally operates at 9.6 kbit/s and is used if the RS422 interface is not available.

The RS232C interface can also be operated at 1200 baud for communication via the public telephone network, using modems. This does not impose any restrictions on functionality, although the response time is prolonged. This transmission speed is not intended for normal work with a target system. For best results, the public telephone network link must be of sufficient quality.

To switch the RS232C interface to 1200 baud, start up a session in On-line Builder (using menu driven start-up mode) with " S" following the number written to the left of the target system type (for example, "1 S").

Connector X4

X4 is a 25-pin D-connector for communication with a PROM programmer and with other computer systems. It contains an RS232C interface, which you can configure as follows:

- 5, 6, 7 or 8 data bits
- 1, 1-1/2 or 2 stop bits
- Even, odd or no parity check
- Generation and detection of modem signals
- Full-duplex mode
- 110 to 19200 baud.

2.2.5.3 Engineering Board's Switches and Jumpers

This section applies to Advant Station 100 Series Engineering Board – ISA and Advant Station 130 Engineering Station (ISA).

DIP-Switches

The DIP-switch determines the AT bus I/O-address of the engineering board's LCA registers. The default position, as shown in Table 2-1, corresponds to the default I/O address 320h.

Table 2-1. Engineering Board's DIP-Switches

Switch	Dip 1	Dip 2	Dip 3	Dip 4	Dip 5	Dip 6	Dip 7	Dip 8
Default Position	CLOSED or ON	CLOSED or ON	CLOSED or ON	OPEN or OFF	CLOSED or ON	CLOSED or ON	OPEN or OFF	OPEN or OFF
Addr. Bit	ADDR2 2^2	ADDR3 2^3	ADDR4 2^4	ADDR5 2^5	ADDR6 2^6	ADDR7 2^7	ADDR8 2^8	ADDR9 2^9
Default Value	0	0	0	1	0	0	1	1

Jumpers

The engineering board has five jumpers, S1 to S5. They are used only for test purposes and must always be plugged during normal operation.

2.3 Shut-down Procedures

Before you shut down your Advant Station 100 Engineering Station click **Start**, click **Shut Down**, and then select **Shut Down** and click **OK** to shut down your computer. Wait until the message box “It is now safe to shut down your computer” is displayed.

Switch the power *off* using the on/off switch at the rear panel.

NOTE

Do not turn off your engineering station until a message appears telling you that it is safe to do so.

2.4 Start-up Procedures

Unpack the Advant Station 100 Series Engineering Station and install the display and the keyboard. Be sure that the on/off switch of the engineering station is *off*.

If you are not using Advant Station 100 Series Engineering Stations, see the *AMPL Control Configuration Release Notes* for information about the installation of AMPL Control Configuration.

Switch the power *on* using the on/off switch at the rear panel. Tilt the display into a comfortable position. Adjust the brightness using the function keys. An automatic system test is executed first. After a few seconds the **Begin Logon** dialog is displayed.

Press **<Ctrl+Alt+Delete>** to open the **Logon Information** dialog.

In the **Logon Information** dialog enter you username, password, and domain.

There are two security levels, administrator mode and user mode. The default usernames and passwords are listed in Table 2-2.

Table 2-2. Default Usernames and Passwords

Username	Password	Member of
Administrator	Administrator	Administrator group
User1	User1	Administrator group

For security reasons, please change the passwords immediately when you logon for the first time. It is also recommended to change the passwords periodically.

2.5 Product Verification

The Advant Station 100 Series Engineering Stations can be identified by two serial numbers:

- Supplier’s serial number, which is fixed on the bottom of the case.
- ABB serial number, which you can see if you remove the keyboard. The label carries the serial number and the article number. The article number starts with “3BSE” or “3BDS”. In addition the label carries the version designation of the pre-installed AMPL Control Configuration software, for example “ACC 1.7/0”.

Chapter 3 Configuration/Application Building

3.1 Considerations

PCMCIA

Advant Station 100 Series Engineering Station is equipped with two PCMCIA standard interfaces. You are able to insert two cards of type I/II or one card of type III.

NOTE

If you install a plug-in or add-on board or card in one of the unused slots, this board or card must fulfill the same Advant OCS environmental immunity specifications and safety standards as the engineering station itself.

3.2 Capacity and Performance

3.2.1 Advant Station 100 Series Engineering Stations' Hardware

Advant Station 100 Series Engineering Stations' hardware is a portable, robust, and hardened industrial personal computer with the following characteristics:

Table 3-1. Advant Station 100 Series Engineering Stations' Hardware

Equipment	AS 120ES (PCI)	AS 130ES (ISA)
Display, VGA- and VESA-compatible	12.1" color active TFT liquid crystal display, adjustable brightness, resolution up to 1024 x 768 pixels	
CPU	Mobile Pentium II with 266 MHz clock frequency	Pentium with 166 MHz clock frequency
CPU cache	Integrated primary 16 kByte instruction cache and 16 kByte write back data, integrated 512 kByte pipelined burst second level cache.	16 kByte (8 kByte instruction + 8 kByte data) + 256 kByte pipelined burst second level cache
Memory	64 MByte main memory	
Hard disk	4 GByte enhanced IDE	2.1 GByte enhanced IDE
Diskette drive	3.5", 1.44 MByte	
CD-ROM drive	min. 20 x speed	-

Table 3-1. Advant Station 100 Series Engineering Stations' Hardware (Continued)

Equipment	**AS 120ES (PCI)**	**AS 130ES (ISA)**
Interfaces	2 serial RS232 PS/2 keyboard and mouse interface Parallel interface (Centronics) Interface for external monitor, VGA and VESA compatible Thin wire Ethernet Adapter with 10/100Base-T connector USB interface	2 serial RS232, SCSI-2 external PS/2 keyboard and mouse interface Parallel interface (Centronics) Interface for external monitor, VGA and VESA compatible
Slots	PCMCIA Standard 2.1: 2 slots type I/II or 1 slot type III 1 long PCI slot used by AS 100EB-PCI 4 unused slots for: 2 long PCI board (internal), 1 long ISA board, 1 short ISA board Please note: It's not possible to use AS 120ES together with AS 100EB-ISA	PCMCIA Standard 2.0: 2 slots type I/II or 1 slot type III 1 long ISA slot used by AS 100EB-ISA.
Keyboard	US keyboard, 84 keys, 12 function keys, 12 system hot keys, detachable, MFII compatible, integrated trackball	
System Monitoring	Temperature, voltage and fan monitoring, watchdog	Temperature, voltage, battery buffer loading, clock speed, counter of operating hours
Housing	Magnesium die cast	Magnesium die cast with add-on ventilation
Carrying bag	Included	
AC Power Supply	See Section 2.1, Site Planning and Section 2.2, Installation Procedures	See Section 2.1, Site Planning and Section 2.2, Installation Procedures
DC Power Supply	-	DC connector is not tested by ABB. Therefore it is locked and marked with symbol ISO 3864 No B.3.1 "Caution (refer to accompanying documents)"(1)
Case dimensions	460 mm x 400 mm x 143 mm (18.1" x 15.7" x 5.6")	385 mm x 300 mm x 82 mm (15.2" x 11.8" x 3.2")
Weight	11 kg (24.4 lb.)	7.5 kg (16.7 lb.)

(1) Use of DC power supply is not permitted for applications in ABB Master and Advant systems. The DC connector is covered, the cover is only removable with a key or tool. If used in other applications than ABB Master and Advant, it is in full responsibility of the user. For more information about this connector refer to IN Lite User Manual.

CAUTION

In DC mode (Advant Station 130 Engineering Station (ISA) only), please make sure power is supplied by batteries, rechargeable batteries, or a power supply with SELV output.

The tiltable display screen, the detachable keyboard, the diskette drive, the hard disk, the Advant Station 100 Series Engineering Board, the cable connections and the CD-ROM drive (Advant Station 120 Engineering Station (PCI) only) are integrated in the case.

Advant Station 100 Series Engineering Stations fulfill all relevant Advant OCS environmental immunity specifications and safety standards.

3.2.2 The Engineering Board PU516

The engineering board PU516 is based on PCI technology and is a high performance microcomputer that executes the major part of the On-line Builder commands, controls the communication to the target systems and shares the peripherals of the engineering station, such as the display and the keyboard.

The engineering board is equipped with:

- A 32-bit microprocessor, Motorola MC68040
- 16 MByte RAM
- Interrupt logic which allows immediate processing of internal or external signals by the processor
- Clock circuits
- Supervision functions
- Communication channels.

The dimensions of the engineering board are: 4.2” x 12.283” (106.68 mm x 312 mm).

3.2.3 The Engineering Board DSPU131

The engineering board DSPU131 is based on ISA technology and is a high performance microcomputer that executes the major part of the On-line Builder commands, controls the communication to the target systems and shares the peripherals of the engineering station, such as the display and the keyboard.

The engineering board is equipped with:

- A 32-bit microprocessor, Motorola MC68020
- 4 Mbyte RAM
- Interrupt logic which allows immediate processing of internal or external signals by the processor
- Clock circuits
- Special monitoring functions
- Communication channels.

The dimensions of the engineering board are: AT size, long, XT high: 334.6 mm x 107.5 mm.

Figure 3-1 shows the default setting of the I/O address switches.

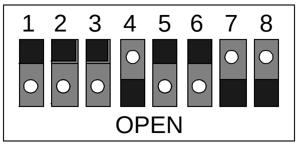

Figure 3-1. I/O Address Switches of Advant Station 100 Series Engineering Board – ISA

3.3 Database Configuration

Not applicable.

3.4 Application Start-up

Not applicable.

3.5 Tutorial

Not applicable.

3.6 Application Procedures

Not applicable.

3.7 Configuration/Application Building Menus

Not applicable.

Chapter 4 Runtime Operation

Not applicable.

Chapter 5 Maintenance

5.1 Preventive Maintenance

Advant Station 100 Series Engineering Board does not need any maintenance. The host personal computer needs some periodical maintenance, such as cleaning of air filters and so on. Please follow the instructions in its User's Guide.

5.2 Hardware Indicators

Refer to the *IN Lite User Manual* or *IP Lite User Manual* depending on the type of your host personal computer.

5.3 Error Messages

Refer to the *IN Lite User Manual* or *IP Lite User Manual* depending on the type of your host personal computer.

5.4 Fault Finding and User Repair

Troubleshooting should be carried out logically and systematically.

Adjust intensity and contrast if the display does not show what you expect.

Make sure you have not mixed up the

- X3 and X4 connectors of the engineering board DSPU131 with some other 9-pin or 25-pin connector of the host computer or
- X5 and X6 connectors of the engineering board PU516 with some other 15-pin connector of the host computer.

Use the Advant Station 100 Functional Test software to test the engineering board DSPU131. For instructions see *Advant Station 100 Series Engineering Board Functional Test Guide*.

Use any test programs of the host if there are any and follow the instructions.

Open your personal computer. For this see the instructions given in *Advant Station 100 Series Engineering Board Installation Guide*. Follow strictly the given safety instructions.

CAUTION

> It can be dangerous to open the personal computer, if not following the safety instructions given in *Advant Station 100 Series Engineering Board Installation Guide.*

Make sure that the fuses are intact and the mains voltage is within the tolerance limits.

Check the mounting of the engineering board and of all other boards, check any connections and if the cables are undamaged.

In case of the Advant Station 100 Series Engineering Board – ISA, make sure that the I/O address of the engineering board is set correctly. See *Advant Station 100 Series Engineering Board Installation Guide* for information about these settings. Make sure the memory and I/O space necessary for the engineering board are free on the AT-bus of the host.

If the tests above do not succeed, contact your nearest ABB distributor or ABB service for Advant Technology and Master organization for help.

5.5 Backup/Restore Procedures

This section describes the principles how to backup and restore the contents on the hard disks on your Advant Station 100 Series Engineering Station.

It is recommended that you do a full system backup for the following cases:

- Prior to upgrading your engineering station with new software
- After installing new software
- Periodically.

  Back up your system periodically to minimize loss of ongoing work in the event of a system crash. You can restore the system to the last saved state.

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